Huber puts a great deal of emphasis on a non-quantitative study of the strategic interaction of pricing among the major long-distance carriers. His theme is that AT&T is a price leader, establishing an umbrella under which the other carriers shelter. But the description tells us nothing more than the obvious: AT&T, MCI, and Sprint are all large enough to think about each other when they set prices. They serve their shareholders' interests by trying to maximize profits given their strategic environments. But, as I showed earlier, the resulting level of profit does not exceed a normal return on investment. Huber observes that the outcome of this strategic interaction is more stable than in the airline industry, but he does not mention that airlines are extreme among American businesses in price volatility. Stable prices are no indicator of poor performance, nor is the outbreak of periodic price wars a sign of good performance. A reasonable comparison of long distance to other industries with a limited number of larger sellers but good overall performance would seem to be in order. Overnight package delivery-dominated within the United States by Federal Express but also served by several other large firms-is one example. Huber would be forced to the same pessimistic conclusions about package delivery as he reaches for long distance, which would puzzle many highly satisfied customers in this market.

As a general matter, the new Huber report is unsuccessful in its case against the current structure of the long-distance industry. Significantly, the report does not propose any structural reforms of the industry—it is pessimistic about current performance, but even more pessimistic about performance under the realistic alternatives of monopoly or re-regulation. Huber's general conclusions about the telephone industry seem to be

backwards. He sees fertile ground for competitive rather than regulated local telephone service, but believes that competition is not working in long distance. At the current stage of development of telephone technology, the true natural monopoly, outside of dense urban areas and larger businesses, is most likely for local service. As long as regulators continue to provide the telephone customer with a truly free choice among long-distance carriers, supported by regulations including structural safeguards such as the line-of-business restriction, competition delivers superior results in long distance over any other way to organize and discipline the industry.

Impact of Entry into Long Distance by the Local Exchange Carriers

The RBOCs have proposed the lifting of the line of business restriction, so that they could jointly operate local and long-distance service. Their principal argument in favor of this step is that their entry into the long-distance market will reduce the market power of the current long-distance carriers. This argument has three major defects: (1) Entry would not, especially in the longer run, change the number of carriers or affect market power, (2) given the absence of barriers to entry and the absence of abnormal profit, there is no market power left for the RBOCs to help compete away, and (3) RBOC control of a long-distance carrier may

well *increase* market power because of the dangers of joint control of local and long-distance service.

Effect of RBOC Entry on the Number of Carriers

Because entry is driven by potential profit, RBOC entry might well displace the entry of some other new carrier. In other words, permitting an RBOC to operate a long-distance carrier would not necessarily increase the number of carriers. This effect of displacing the entry of other carriers would be especially strong in the longer run.

Market Power

The hypothesis of market power receives no support from the analysis presented earlier in this chapter. First, there are no artificial barriers to entry in long distance. If the existing carriers were exerting significant market power and raising prices much above the competitive level, there would be profit opportunities for new entrants. As I stressed earlier, entry can take the form of local or specialized service, as well as the creation of a new national carrier. A great deal of entry has occurred since divestiture, and has competed away the profit opportunities that previously existed.

Second, a direct examination of profit suggests no earnings beyond the normal return to investment.

Third, a striking piece of evidence of healthy competition in the long-distance industry is that the RBOCs have chosen not to pursue

opportunities in the industry so far. Under current law, an RBOC could enter the business by spinning off a separate long-distance entity not under the RBOC's subsequent control or ownership. Spin-offs are not a novel concept in this or other industries. For example, Pacific Telesis has proposed to spin off its cellular telephone operations.

The economic analysis of the corporation stresses that a corporation is operated to maximize the economic value achieved by its shareholders, subject to all relevant laws. If an RBOC has resources and knowledge that are well suited to operating a long-distance carrier, and if the RBOC believes that there are opportunities for profit, beyond a normal return on investment, in the long-distance industry, then the RBOC has an absolute duty to its shareholders to pursue that opportunity. Under the line-of-business restriction, pursuit of the opportunity would take the form of creating a new corporation containing the long-distance resources and distributing shares in the new corporation to the RBOC's existing shareholders, just as Pacific Telesis has proposed to do in cellular.

An alternative approach would be to spin off the local exchange service, so that the remaining entity, containing all the other activities of the RBOC, could enter the long-distance business.

Because no RBOC has chosen to enter the business through either type of spin-off, it is reasonable to conclude that RBOC managements agree with the market in general that there are no extra profits to be made in today's long-distance market. Investments in long distance pay for depreciation and the financial cost of capital, but do not earn more. The RBOCs' own behavior

confirms that competition in long distance has erased the abnormal profits that would come with market power.

Anticompetitive Effects of Joint Control

The failure of the RBOCs to pursue their ability to enter long distance by spin-off coupled with their persistent requests to be relieved of the line-of-business restrictions suggest that it is only the special advantages of coupling local exchange and long distance that propel RBOC entry into long distance. I am not aware of any important technical advantage flowing from combining local exchange and long distance. The splitting of the RBOC system into the RBOCs and AT&T was socially wasteful if there were such advantages. The superior performance of the long-distance industry since divestiture certainly suggests otherwise. Generally, the long-distance carriers have advanced technologically more rapidly than the RBOCs. Where there are identifiable efficiencies, such as in billing, specific contractual arrangements can take full advantage of those efficiencies.

If the advantages of joint operation of local and long-distance service are not the result of technical efficiencies, there is a very real possibility that an important factor lying behind the RBOCs' desire for joint operation is the anticompetitive benefit that joint operation conveys.

First is the incentive for the local carrier to favor its own long-distance carrier over its rivals. An important modern literature in antitrust economics considers situations where one seller-here the local carrier and its long-distance affiliate-raises its rivals' costs. A local carrier can raise the costs

of rival long-distance carriers by delaying access lines, requiring costly forms of interconnection, degrading its technology, and in other subtle ways. A local carrier may also be able to make it more difficult for a rival long-distance carrier to recruit its customers. Although regulators are aware of the inefficiency of such practices and strive to suppress them, the situation remains a significant factor in making policy decisions.

Experience in voicemail has been revealing about the RBOCs' ability to raise their rivals' costs. After the RBOCs were permitted to operate voicemail services, several of them raised tariffs to independent answering services by huge amounts. They also began to deny call forwarding on busy or no answer in connection with answering services, even though it is available to other customers. Other RBOCs actively solicit voicemail business from any customer who orders call forwarding.

The second incentive issue presented by RBOC entry into long distance arises from imperfect regulation of a hybrid entity. Now that the RBOCs are involved in numerous unregulated activities other than their local exchange functions, regulators are already struggling with some of these incentive issues. Regulation has to be vigilant that resources actually used in unregulated activities are not included in the regulated rate base. To the extent that regulation is unsuccessful, two adverse economic effects occur. One is the overpricing of local exchange service. The other is the inefficient expansion of unregulated activities. The ability to put the cost of an input into the rate base is equivalent to making the input free for the unregulated operation. The unregulated arm of the local carrier can set a price below the competitive level and even below cost. Both the elevation of local telephone

prices and the depression of unregulated prices are socially harmful—there is a deadweight burden (loss of social welfare) from any departure of a price above or below its efficient level.

Though limiting the costs in the rate base to those genuinely arising from local exchange service is hardly a new problem for regulators, coupling local and long-distance service presents a much greater challenge than the existing coupling of out-of-area telephone operations, distribution and marketing of equipment, and the other unregulated activities of the RBOCs. Considering the limited resources available to regulators, and the many challenges they already face, regulators are unlikely to provide adequate supervision of an RBOC integrated into long distance.¹¹

Structural Separation

The principle of structural separation is the centerpiece of the policy of divestiture. The principle imposes a limitation on telephone carriers—that there may be no joint operation of local and long-distance service. I believe that the principle of structural separation is a sound one, from the point of view of the welfare of the U.S. consumer. Structural separation does not reduce the number of sellers in the long-distance market. Moreover, the

¹¹The FCC has had its hands full with the challenging problems of regulating cable TV recently. The U.S. General Accounting Office has recently issued a report on the FCC's ability and success in preventing the billing of costs of unregulated activities to regulated entities (Telecommunications: FCC's Oversight Efforts to Control Cross-Subsidization RCED-93-94, February 1993). The report concludes that there have been some important instances of inappropriate cost reporting and that the agency's resources are inadequate to detect and correct these problems.

principle of structural separation arose from very real concerns about how freely the customers of a local exchange carrier could choose among alternative long-distance services if the local carrier offered one of the services.

The philosophy of structural separation developed from the view that the coupling of local exchange and long distance, in a setting where market forces rather than regulation would govern resource allocation and pricing in long distance, provided inappropriate incentives for the local carriers. Structural separation will remain a valid principle for governing the telephone industry as long as there remains a significant amount of market power in local telephone service.

Conclusions

Modern technology, together with intelligent structural safeguards, has created a competitive long-distance industry in the United States that has delivered superior performance to its customers. Three large rivals, along with important regional carriers, compete actively in the market. An active market in transmission capacity facilitates competition by smaller carriers. Signs of market power and the failure of competition are absent; in particular, the major carriers do not earn abnormal returns on their investments. There are no artificial barriers to entry. Entry would occur if non-competitive pricing resulted in attractive profit margins. The fact that some firms, such as the RBOCs, have chosen not to enter is a sign that competition has done its job in long distance.

Of course, the long-distance market is not perfectly competitive. Competition, accompanied by appropriate regulatory policies, has achieved outstanding results in the most important submarkets for both residential and business service. But there are pockets where competition could be further improved. For example, hotel guests and others placing long-distance calls away from their homes or offices do not face the same convenient choice of carrier that equal access guarantees them for calls from their own phones. The regulatory philosophy underlying equal access should be extended to these calls. It is technically feasible and economical to permit the caller placing a 0+ call to choose a carrier by decoding the caller's billing number, a procedure called billed party preference.

The success of competition in the long-distance industry is in important part the result of intelligent regulation. Instead of heavy-handed price controls, regulation has created a structure within which long-distance competition has benefited consumers. The firms that prosper are the ones that deliver a set of products highly valued by their customers, at prices at least as good as their rivals.

Chapter 3. The WEFA Study of Elimination of the Line-of-Business Restriction

The WEFA Group has conducted a study entitled Economic Impact of Eliminating the Line-of-Business Restrictions on the Bell Companies. ¹² The study asserts a lack of competition in long distance and predicts large reductions in long distance prices in the event of a lifting of the restriction on RBOC control of long-distance sellers. The study also posits a sweeping change in regulatory policy that would lift all current restrictions on competition with the local exchange carriers, and yield large reductions in access charges imposed on long-distance carriers. The transformation of local service is intrinsic to WEFA's analysis, because a substantial part of the study's projected decrease in long-distance rates is caused by the decline in access charges.

WEFA projects substantial improvements in both aggregate output and national employment as a result of the lifting of the line-of-business restriction. These projections, however, are driven entirely by the assumptions the WEFA study makes about the effect of RBOC entry and

¹²WEFA Group, undated.

deregulation of local service on long-distance prices. The study does not indicate how the projected changes in the telephone industry are introduced into the WEFA macroeconomic model. However this connection was made, the validity of the estimates of the national macroeconomic effects depends entirely on the accuracy of the analysis of the effects in the telephone business. If, contrary to WEFA's conclusion, the lifting of the line-of-business restriction had anticompetitive effects and raised the price of long distance, the national effects would be adverse.

WEFA's Conclusion that Competition is Ineffective in Long Distance

WEFA argues that the long-distance industry is non-competitive today and that it would become significantly more competitive upon a lifting of the line-of-business restriction on the RBOCs. WEFA takes three approaches to support its case that the industry is uncompetitive

WEFA's first observation is that the three largest carriers tend to have roughly equal prices. Though WEFA concludes that this finding "...suggests a lack of price competition among the major IXCs," it is a standard principle of economics that no conclusion about competition can be drawn from the identity of prices. Purely competitive prices are necessarily equal. Surely WEFA would not conclude that silver miners are oligopolists because they all receive the same price for their silver.

WEFA's second approach examines the cost savings that are available to a large purchaser of long-distance services who chooses to buy private-line capacity from long-distance carriers in place of using their switched services. WEFA confirms the conclusion of many large corporations, that there are cost savings to be made from purchasing capacity in bulk. Interestingly, one of the most vital areas of competition in long-distance involves luring these customers back to switched service by offering virtual network service, which is just as cheap to the corporation as bulk purchases but exploits the efficiency of common use of the carrier's capacity through switching. WEFA is quite correct that savings are available through bulk purchases or virtual networks, but quite incorrect in drawing any conclusions about competition in the long-distance industry. Differences in wholesale and retail prices tell us nothing about competition in the provision of long-distance service itself. Suppose that WEFA found that the same onion that costs 25 cents in the grocery store were available from a farmer for 10 cents. Would they conclude that farming was a non-competitive industry? In any case, the conclusion that there are abnormal profits available from reselling bulk capacity is paradoxical. Not only can larger customers take advantage of the efficiencies of bulk purchases themselves, but the hundreds of resellers already in the market are in the business of competing away any true excess profit available from reselling.

WEFA's third observation is that a measure of the marginal cost of long-distance service is less than its price. Making useful inferences about industry performance from the relation of marginal cost to price is a challenge-although it is true that the textbook perfectly competitive industry

has marginal cost equal to price, it is difficult to relate departures from that equality into a suitable measure of performance. An industry could have marginal cost below price, but still be workably competitive and not offer any profit to a potential entrant or social benefit from entry.

In any case, WEFA's attempt to measure marginal cost bears little relation to the concept relevant for comparison to price. WEFA observes that the incremental cost of one additional fiber long-distance circuit is no more than \$.01 per minute. Adding this to a measure of access cost, they get a total of \$.065, well below their measure of the price of a typical long-distance minute of \$.18. This calculation is equivalent to measuring the marginal cost of a shoe from the wholesale cost of its leather. WEFA omits almost all the elements of cost that account for employment in the long-distance industry. According to WEFA, a long-distance carrier never has to sell its products, never has to bill a customer, and never has to design new products.

WEFA's estimate of cost is paradoxical in view of the reported costs of the long-distance carriers. WEFA offers no hint as to why reported costs are more than twice as high as WEFA's estimate of cost. The gap is outlandish, considering that the carriers are operated on behalf of their shareholders, who could be counted upon to protest such a large gap between actual and potential cost. The estimate is equally paradoxical in view of the lack of barriers to entry in long distance. Every business with any expertise in communications ought to rushing into an industry where output can be sold for almost three times cost. WEFA's cost estimate fails every test of reasonability. None of the three elements of WEFA's indictment of competition in long distance holds water.

WEFA's Analysis of the Effect of RBOC Entry

In order to predict the effect of RBOC entry in the long-distance industry, WEFA applies the well-known Cournot model of oligopoly. The model predicts the decline in prices that accompanies an increase in the number of sellers in a market. WEFA views the current long-distance market as having three sellers of equal size and then models the market after RBOC entry as having four sellers of equal size. Though it is well known how to adapt the Cournot model to sellers of unequal size, WEFA does not apply that adaptation. WEFA hypothesizes that the effect of RBOC entry is to add one seller. This assumption implies that the RBOCs each control only a regional carrier, which is puzzling since the analysis omits consideration of the number considers the mystery that the RBOCs have passed up all opportunities to launch their own carriers by spin-off.

The Cournot analysis predicts a 21 percent decline in price as a result of the shift from 3 to 4 carriers. WEFA posits a total decline in price of 50 percent, almost two and a half times as large as the one predicted by the Cournot model. Their rationalization for the extra 29 percentage points has the elements. First, WEFA projects, without supporting quantitative simples to long-distance carriers by 25 percent. Second, WEFA finds that there is an unexplained discrepancy between the actual long-distance price of \$133 and the price predicted by the Cournot model of \$133 under current

conditions. In the most breathtaking element of the entire analysis, they project that the discrepancy would be eliminated by the regulatory changes they project. In other words, the disappearance of an unexplained failure of their own model is a major element of the price decline they project.

Every step in WEFA's analysis of price declines following the lifting of the line-of-business restriction is flawed, in my opinion. Although the Cournot model has valid applications in the analysis of industries with small numbers of sellers, its application here is incomplete. As I pointed out earlier, there is a large discrepancy between the cost assumed in the Cournot analysis-\$.065 per minute-and the reported costs of the carriers. Though the distinction between average and marginal cost could explain part of the discrepancy, WEFA owes the reader a serious analysis of that type. Further, as WEFA stresses, the prediction of the Cournot model depends critically on the number of sellers, yet WEFA ignores all the sellers except the largest three. Given that they analyze the entry of an RBOC on a regional basis, it would appear that the Cournot model needs to be applied on the same basis, in which case there would be more sellers pre-RBOC-entry and an even smaller predicted price decline.

The assumption that RBOC entry into a regional long-distance market increases the number of sellers by one contradicts the standard economic analysis of the number of sellers in a market. According to that analysis, there is a given number of sellers who can be active in the market and make a profit. Entry by an RBOC will either take the place of entry by another organization who will now perceive that prospective profit is below the hurdle rate of return, or the entry will cause the withdrawal of an existing seller who finds it

unprofitable to remain in the market. Standard economic analysis would predict no change in the number of long-distance sellers in a market, at least in the longer run, from RBOC entry. Then the Cournot model and all oligopoly models would agree that the effect on price from RBOC entry is zero.

But much of the decline in long-distance prices projected by WEFA is unrelated to changes in competition in that market. The decline comes from increased competition in local telephone service, which would lower access charges for long distance, and from the elimination of the error that WEFA's model makes in explaining the current price of long distance. The former, although a laudable long-term goal, could not reasonably be projected as a likely result of lifting the line-of-business restrictions. The latter is purely a deficiency of the study.

WEFA's Macroeconomic Analysis

WEFA projects substantial improvements in national output and employment from their analysis of the effects on the telephone industry of lifting the line-of-business restriction. I think there are important flaws in their macroeconomic projection. Although it is beyond doubt that productivity improvements in one industry, such as long distance, result in higher national output and an improved standard of living, the projections matter by WEFA make little economic sense. Most fundamentally, WEFA's projections violate the principle that, in the longer run, the number of employed workers in the economy is limited by the number of people

available to work. It is true that unemployment is above its normal level today, so an expansionary force could raise employment. But natural forces will restore full employment over the next few years, as they have in the aftermath of every previous recession. The stimulus of more than 3 percent to employment in the year 2003 that WEFA projects defies every principle of macroeconomics. If the WEFA analysis were restated to respect those principles, all of its exaggerated findings would be attenuated, because all of the detailed effects, by industry and state, are roughly proportional to the national employment effect.

Conclusions

WEFA is unpersuasive that lifting the line-of-business restriction would have any favorable effects on competition in the long-distance market. The study gives no consideration at all to the potential unfavorable effects of allowing a local telephone carrier to control a long-distance carrier, in spite of the persuasive case against joint control that led to the line-of-business restriction in the first place. WEFA's Cournot model of the long-distance industry is contradicted by the profit levels of the carriers, which are far below those predicted by the model. WEFA's characterization of regional entry by each RBOC ignores existing regional competitors. And two of the sources of wEFA's projected sources of declines in long-distance prices-lower prices of local telephone service and the disappearance of an error in the WEFA model-have nothing to do with RBOC entry into long distance.

Chapter 4. Summary and Conclusions

Since divestiture, the long-distance industry has been governed and disciplined by competition. Competition is the way that the great majority of industries in the U.S. economy are governed, and it has been successful in long distance just as in most other industries. The long-distance industry is technologically suited to competition. Carriers of different sizes and specialties can remain viable permanently—there is no force that inevitably leads to dominance by a single carrier. As entry of new carriers proceeded after deregulation, the single carrier under the earlier organization of the industry, AT&T, experienced declines in its market share.

Under competition, the long-distance industry has delivered large price reductions and improved quality and diversity of service. Only part of the improvement is the result of lower access charges paid to local telephone companies.

A number of important conclusions about national telecommunications policy flow from this study of the long-distance industry:

Regulators have an important remaining responsibility to preserve an environment best suited to competition in the industry.

- The responsibility will remain as long as a significant number of telephone customers have no efficient alternative to a single local telephone company.
- Structural separation of local and long-distance service is economically efficient.
- If structural separation is abandoned and there is joint control of local and long-distance service, the existing conditions for effective competition among long-distance carriers may be compromised.
- One danger is that, despite the contrary efforts of regulators, local telephone companies will favor their own long-distance arms over the competitive rivals in long distance. The bias may come in technical forms of lower quality and higher price of access, or in interference with the free choice of customers among long-distance carriers.
- The other danger is that the local telephone company may charge costs of its long-distance business to its regulated local business, which is economically harmful and inefficient in both markets.
- The principle of structural separation does not limit entry to long distance by the RBOCs. Entry via spin-off is available at any time, and would provide whatever benefits to the RBOCs shareholders that would legitimately flow from entry with joint control.

Data Appendix for:

Long Distance: Public Benefits from Increased Competition

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Figure 1. MCI's Domestic Minutes of Service as a Percent of AT&T's

	AT&T	MCI	Ratio
1985	96,935,464	9,03 7,498	9.32%
1986	113,735,544	15,533,058	13.66%
1987	133,269,107	20,136,429	15.11%
1988	137,667,730	25,979,181	18.87%
1989	145,066,924	34,554,041	23.82%
1990	159,742,110	43,218,883	27.06%
1991	166,585,781	49,756,835	29.87%
1992	174,495,572	57,324,690	32.85%

Source: Derived from FCC Statistics of Communications Common Carriers, 1985-1992; FCC Monitoring Report, July 1991; adjustments based on MCI internal documents.

Figure 2. MCI's Circuit Miles Circuit Miles (millions of miles) 1,193 1,477 1,888

Source: MCI Annual Report for 1986, MCI Investor Fact Book 1993

2,107

Figure 3. Government Indices of Long-Distance Prices Relative to the General Price Level

	CH	H	GDP Defiator	CPI in \$1987	PPI in \$1987	Index of Real CPI	Index of Real PPI
1979	82.10	120.80	65.50	125.34	184.43	124.95	123.21
1980	83.00	127. 40	71.70	115.76	177,68	115.39	118.71
1 981	84.90	127.40	78.90	107.60	161.47	107.26	107.88
1982	99.80	153.40	83.80	119.09	183.05	118.72	122.30
1983	101.60	153.40	87.20	116.51	175.92	116.14	117.53
1984	9 8.90	145.60	91.00	108.68	160.00	108.34	106.89
1985	94.70	141.30	94.40	100.32	149.68	100.00	100.00
1986	88.00	127.20	96.90	90.82	131.27	90.53	87.70
1987	76.70	115.30	100.00	76.70	115.30	76.46	77.03
1988	72.10	109.10	103.90	69.39	105.00	69.17	70.15
19 8 9	69.80	108.00	108.50	64.33	99,54	64.13	66.50
1990	69.00	107.90	113.20	60.95	95.32	60.76	63.68
1991	67.50	105.40	117.80	57.30	89.47	57.12	59.78
1992	68.20	107.40	120,90	56.41	88.83	56.23	59.35

Source: For interstate CPI and PPI, FCC Reference Book on Rates, Price Indexes, and Household Expenditures for Telephone Service. For GDP deflator, Economic Report of the President, January, 1993.

Figure 4. Indices of Price per Minute Relative to the GDP Deflator

	Revenue per Minute			Index
	For the Three	GDP	Rev/Min	For the Three
	Largest Carriers	Deflator	in 1985 \$	Largest Carriers
1985	0.304	94.40	0.304	100.00
1986	0.250	96.90	0.243	80.06
1987	0.205	100.00	0.193	63.59
1988	0.195	103.90	0.177	58.32
1989	0.180	108.50	0.157	51.48
1990	0.156	113.20	0.130	42.82
1991	0.146	117.80	0.117	38.55
1992	0.143	120.90	0.111	36.64

Source: Derived from FCC Statistics of Communications Common Carriers, 1985-1992; FCC Monitoring Report, July, 1991; MCI internal documents. For GDP and price indices see table, "Figure 3. Government Indices of Long-Distance Prices Relative to the General Price Level."

Figure 5. Revenue per Minute for AT&T, MCI, and Sprint in 1985 Dollars

	Revenue per Minute	Access per Minute	Revenue per Minute
	in 1 985 \$	in 19 85 \$	Net of Access
1985	0.3041	0.1527	0.1513
1986	0.2435	0.1399	0.1036
1987	0.1934	0.11 64	0.0770
1988	0.1774	0.1025	0.0749
1989	0.1565	0.0885	0.0680
1990	0.1302	0.0736	0.0566
1991	0.1172	0.0646	0.0526
1992	0.1114	0,0606	0.0508

Source: Derived from table, "Figure 4. Indices of Price Relative to the GDP Deflator," FCC Monitoring Reoirt, adjustments based on MCI documents.